

CLAIMS:

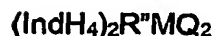
1. A process for the preparation of polyolefins having a bi - or multimodal molecular weight distribution comprising the steps of:

(i) contacting olefin monomer and a first co -reactant with a catalyst system in a first continuously stirred reactor under first polymerisation conditions to produce a product comprising a first polyolefin having a first molecular weight distribution; and

(ii) contacting olefin monomer and a second co -reactant with a catalyst system in a second continuously stirred reactor under second polymerisation conditions to produce a product comprising a second polyolefin having a second molecular weight distribution that is different from the first molecular weight distribution;

wherein the first and second continuously stirred reactors are connected in series, and the first and second polyolefins are mixed together, and wherein one of the co-reactants is hydrogen and the other is a comonomer, and wherein each catalyst system comprises

(a) a bis-tetrahydroindenyl catalyst component compound of the general formula:



where each Ind is the same or different and is indenyl or substituted indenyl, R^{M} is a bridge which comprises a C₁-C₄ alkylene radical, a dialkyl germanium or silicon or siloxane, or an alkyl phosphine or amine radical, which bridge is substituted or unsubstituted, M is a Group IV metal or vanadium and each Q independently is a hydrocarbyl having 1 to 20 carbon atoms or halogen.; and

(b) an activating agent which activates the catalyst component.

2. A process according to claim 1, wherein the product of step (i), including the olefin monomer, is contacted with the second co-reactant and the catalyst system in

step (ii) to produce and mix the second polyolefin with the first polyolefin in the second reaction zone.

3. A process according to claim 1, wherein each polyolefin is produced individually in a reactor and mixed together by extrusion.
4. A process according to any one of the preceding claims, wherein the olefin monomer is ethylene.
5. A process according to any one of the preceding claims, wherein the second co - reactant is hydrogen and the comonomer is hexene.
6. A process according to any one of the preceding claims, wherein the temperature of each reaction zone is in the range of from 60°C to 90°C.
7. A process according to any one of the preceding claims, wherein the activating agent which activates the catalyst component comprises an aluminium -containing activating agent or a boron -containing activating agent.
8. A process according to any one of the preceding claims, wherein the catalyst system further comprises an inert support.
9. A polyolefin having a bi - or multimodal molecular weight distribution obtained by the process of any one of claims 1 to 8.
10. A polyolefin according to claim 9, wherein the polyolefin is polyethylene.